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ABSTRACT

The usefulness of intact (topic outline format) and embedded (positioned within text) headings as processing aids to facilitate recall was examined, using a 2,500-word passage from introductory science textbooks. Prior studies were subject to criticisms which this study attempted to correct, specifically: (1) use of non-optimal dependent measures: (2) use of short, artificial prose: (3) emphasis on immediate testing: (4) lack of training and practice on the use of headings as processing aids: and (5) failure to examine intact and embedded headings presented in combination. Results indicated no advantage to training, possibly because of the amount of training and time available to students for integrating training with their existing study habits. Compared to a text-without-headings group, however, students provided with intact and embedded headings had superior recall. The text-with-headings group recalled 11 percent more information at immediate testing, and 44 percent more information at five-day delayed testing than their counterparts. Results suggest that headings are more useful for retreival than for comprehension. It is concluded that textbooks should include headings and students should use them extensively as study aids. (The post experiment questionnaire on student study habits is appended). (Author/CP)

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Employing Intact and Embedded Headings to Facilitate Long-Term Retention of Text

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Abstract

This study examined the utility of intact (i.e., topic outline format) and embedded (i.e., appropriately positioned within the text) headings as processing aids with non-narrative text. The argument was advanced that headings potentially provide useful cues for both input and output processing but that little empirical evidence exists to either support or refute this proposition. It was further argued that each of the prior studies reviewed were subject to one or more of the following criticisms which may attenuate the generality of the findings: (a) the employment of non-optimal dependent measures, (b) the use of short, artificial prose, (c) emphasis on immediate testing paradigms thus creating an implicit bias against the potential long term benefits of headings, (d) lack of training on the use of headings as processing aids, and (e) failure to examine the effects of intact and embedded headings presented in combination. The results of the present study indicated that no advantage accrued to students on the basis of training; however, limitations of this finding are discussed in terms of the amount of training provided and the time available to the students for integrating the new strategies with their existing techniques. The major result of this investigation was that students provided with text containing intact and embedded headings significantly

outperformed students whose text did not contain these processing aids. The major benefits were observed at delayed testing; the text-with-headings students recalled approximately 11 percent more information at immediate testing and 44 percent more information at delayed testing than the text-without-headings students. Implications of these results and future research issues are discussed.

Utilizing Intact and Embedded Headings as Processing Aids with Non-Narrative Text

Headings, whether presented intact (i.e., in topic outline format) or embedded in text, are prevalent in most high school and college textbooks; they are also a highly recommended prelude to writing (e.g., Hodges & Whitten, 1977; pp. 337-347). Headings can provide information about the structure of knowledge in a particular domain and/or the author's communication structure. During input processing, headings potentially provide cues for triggering a student's prior knowledge, and a system for organizing the information for higher order comprehension and storage. During output processing, headings may serve as retrieval cues and as formats for responding.

Even though headings are used extensively by authors, emphasized in study skills courses, and recommended as adjuncts in teaching content (e.g., Thelen, 1976), there has been very little research on their utility as processing aids.

The effects of intact and embedded sets of headings have been examined separately in prior research. Northrop (1952) found that presenting students with an outline before seeing a film had a positive effect on recall. However, with prose material, Christenson and Stordahl (1955) failed to find any

facilitating effects for a number of organizational aids including outlines. More recently Proger, Taylor, Mann, Coulson, and Bayuk (1970), testing four types of supplementary material, found that sentence outlines significantly enhanced subsequent test performance only on items included within the outline. In a related experiment Proger, Carter, Mann, Taylor, and Bayuk (1973) found that presentation of a sentence outline or a paragraph abstract had a greater positive impact on comprehension scores than presentation of a true-false pretest.

Eggen, Kauchak and Kirk (1978), in an experiment with fourth, fifth, and sixth grade students, found that hierarchical outlines presented in addition to a 1,000-word text significantly improved performance on production and comprehension subtests.

Using hierarchical outlines as pre and post organizers for passages containing logically ordered and scrambled paragraphs, Glynn and DiVesta (1977) found that pre-material outlines significantly facilitated recall of specific reproductive statements, and that post-material outlines, when given with a text containing scrambled paragraphs, enhanced recall performance for productive statements.

Previous research with titles has demonstrated the potential importance of embedded headings in the processing of prose. Using short, narrative passages that were specially constructed

to be ambiguous, Bransford and Johnson (1973) demonstrated that the title ("heading") presented before a passage strongly determined the interpretation given to the passage; further, sentences more consonant with a particular interpretation had a higher probability of recall when the subject received the corresponding title. Bransford and Johnson interpreted these results as indicating that appropriate titles can aid the comprehension and recall of prose by providing the reader with effective schemata (plans) for processing the material; this study was later replicated by Schallert (1976). Similar positive results for single headings have been obtained by Anderson, Spiro, and Anderson (1977) and Doktorow, Wittrock, and Marks (1978).

The few prior studies designed to assess the effects of sets of embedded headings have produced equivocal results (e.g., Hites, 1954; Klare, Shuford & Nichols, 1958; Lee, 1965; Robinson & Hall, 1941). These results are not necessarily surprising given the apparent lack of sensitive dependent measures and diverse methodologies for developing headings and assessing their impact.

As alluded to in the foregoing paragraph, a number of methodological shortcomings are apparent in the studies cited; each of the studies is subject to one or more of the following criticisms which may have attenuated the apparent findings:

1. Utilization of non-optimal dependent measures. While the use of free recall does not represent a panacea as a dependent measure, a mounting body of evidence suggests that it may be more sensitive to certain types of experimental manipulations with prose materials than other measures such as multiple-choice or cloze exams (cf. Carroll, 1971; Carter & Carrier, 1976). Consequently, the use of only these latter types of measures, as has been done in the majority of the prior studies on headings, may mask important experimental effects.

2. Utilization of short, artificial stimulus material. While the use of short, artificial prose such as that utilized by Bransford and Johnson (1973) or Anderson, Spiro, and Anderson (1977) allows the researcher to maintain a high standard of internal validity, it severely curtails the external validity of such studies. The negative consequences of this type of material in studying written discourse has been discussed by Rothkopf (1972; p. 315).

3. Utilization of an immediate testing paradigm. The use of an immediate testing paradigm contains an implicit expectation that the use of headings will be advantageous at input rather than at output. Consonant with Jacoby's (1974) notion of dual retrieval strategies and Tulving's (1968) concept of dual retrieval cues, it would seem reasonable to argue that headings may provide retrieval cues that are more effective at

delayed rather than immediate testing.

4. Lack of training. Although training of students, particularly on the use of headings, has been advocated by some prior investigators (e.g., Rigney & Munro, 1977; Robinson & Hall, 1941) these suggestions do not appear to have been implemented in any prior research. Consequently, until more empirical data is available, paradigms which have not attended to the training issue are subject to the criticism that any benefits of headings may have been obscured by the students either not having attended to the presence of the headings or possessing ineffective strategies for employing the headings as processing aids.

5. Examination of intact and embedded headings separately. It would appear that intact sets of headings may provide the student with information about the superordinate topics and their interrelationships, but do not necessarily provide ties between the superordinate information in the outline and the subordinate information presented in the text. On the other hand, embedded headings, by their presence in the text, provide clear ties between the superordinate and subordinate information but probably do not effectively indicate the interrelationships between superordinate topics.

In actual textbook usage both intact and embedded headings are typically employed, however, in previous studies the combination of these two heading formats has not been examined.

The present investigation sought to respond to each of these sources of criticism. The specific objectives of the study were to examine the influence of headings as processing aids and training on the use of headings (both as input and output processing aids) with ecologically-oriented text under conditions of immediate and delayed recall; both intact and embedded headings were utilized in the investigation.

The principal manipulations of the paradigm employed in the study were represented by four experimental conditions (groups): training on the use of headings as output cues (O/T; received stimulus passages with headings), training on the use of headings as input cues (I/T; received stimulus passages with headings), practice own study methods (H; received stimulus passages with headings), and practice own study methods (C; received stimulus passages with the headings deleted).

The hypotheses to be addressed by this paradigm were:

1. Since the input role of headings may be limited by the prior knowledge of the students, the use of ecologically-oriented text might limit the effectiveness of headings on input. Consequently, it was expected that output training would result in better performance than training for input. Further, any advantages of output training would more likely be observed in the delayed testing condition.

2. The performances of students receiving training on the use of intact and embedded headings as processing strategies

were expected to be superior to that of untrained students provided with headings.

3. Since the presence of intact and embedded headings was assumed to be a processing aid, it was expected that the performances of students receiving stimulus passages containing the headings would be superior to the performances of students whose passages did not contain the headings. Further, any advantages of headings as processing aids would more likely be observed in the delayed testing condition.

Method

Participants

Ninety-five students were recruited from general psychology courses and randomly assigned to the four groups. The sample sizes were 23, 24, 22, and 21 for groups C, H, I/T, and O/T, respectively. (Five students failed to complete the experiment.) All students received four hours of experimental participation credit and a small fee.

Procedure

The study consisted of four sessions:

Session 1 (120 minutes)

During this session students received a general introduction to the experiment and were asked to sign consent forms; these forms detailed the student's obligations in the experiment and acknowledged that s/he was participating on a voluntary basis.

Following this, students were randomly assigned to groups; members of each group were directed to designated classrooms and received folders containing practice materials and instructions corresponding to group assignment. Additionally, treatments and administrators were randomly assigned to groups and the administrators periodically rotated amongst groups to ameliorate any potential experimenter effects on the students.

The "training" groups' (Groups I/T and O/T) sessions consisted of the students reading the strategy instructions and then applying the technique to a practice passage similar in format to the passages to be encountered during the assessment sessions. Following this "study" period (20 minutes) the students were tested over the passage using the type of exam (i.e., free recall) to be employed as the dependent measure in the assessment sessions. The "no-training" groups' (Groups C and H) sessions were identical to those of the training groups with the exception that the students' instructions were to apply their "normal" study methods during the study session (see Dansereau, Collins, McDonald, Holley, Garland, Diekhoff, & Evans, 1979a; Holley, Dansereau, McDonald, Garland, & Collins, 1979; and Holley & Dansereau, Note 1, for elaboration of the no-training control procedure).

Session 2 (120 minutes)

Students spent 50 minutes studying a 2400 to 2500-word

passage. Two passages were utilized: one extracted from an introductory geology textbook ("Plate Tectonics") and one extracted from an introductory biology textbook ("Ecosystems"). One-half of the students (within each group) received the geology passage and the other one-half received the biology passage; during session 3 each student received the passage to which s/he was not exposed during session 2. After studying the passage, students spent 18 minutes responding to a free recall exam.

Session 3 (60 minutes)

Students spent 50 minutes studying and taking notes over the "second" passage.

Session 4 (60 minutes)

During this session, which occurred five days after the previous session, students responded to the free recall exam (18 minutes) for the "second" passage. All procedures were identical to those employed in Session 2 with the exception that the students also completed a post experiment questionnaire.

Stimulus Material

Passage selection. As previously stated, two prose passages were employed in the study; these passages were selected from introductory textbooks and have been utilized in a number of prose processing experiments (e.g., Collins, Dansereau, Holley, McDonald, & Garland, in press; Dansereau et al., 1978a; Dansereau,

Holley, Collins, Brooks, & Larson, 1979b; Holley et al., 1979; Brooks, Note 2; Holley, Note 3; McDonald, Note 4). The passages are 2400-2500 words in length and discuss two separate subject matters (i.e., plate tectonics and ecosystems).

These passages were selected in conslutation with faculty in the appropriate content areas. They were chosen, in part, because of the similarities of their non-content properties (e.g., approximately the same length, 2400 to 2500 words; same number of author headings; same readability ratings, etc.). In addition, the content areas were chosen to ensure a rather limited amount of direct prior knowledge on the part of the students. Ratings obtained from participants in prior studies indicate that the majority have been previously exposed to less than 20% of the material presented in these passages. Student feedback also indicates that they view these passages as being representative of material encountered in regular courses in terms of complexity, writing style, and vocabulary level.

Development of headings. Using the author-provided headings as a starting point, five judges who were knowledgeable about each of the content areas rated the appropriateness of each heading on a nine-point Likert-type scale (1=very inappropriate, 9=very appropriate). Each judge was instructed to suggest alternatives for headings receiving a rating less than seven. The process was then repeated on suggested alternatives until

sets of headings meeting the criteria were produced. Only two iterations per passage were required since the majority of the author-provided headings received a mean rating of seven or greater. In order to control for the possibility that the headings might provide information not available in no-heading versions of the text, it was necessary to impose the additional criterion that the information presented in a heading was also available in the section following the heading.

Characteristics of each set of headings (i.e., frequency of headings and number of words per heading) were found to be within the range of the headings used in a variety of introductory science textbooks.

Dependent Measures

Free recall. This type of dependent measure appears to have become the method of choice in basic studies dealing with prose processing (e.g., Johnson, 1970; Kintsch & Van Dijk, 1978; Meyer, 1975). Free recall requires the participant to write down everything remembered about the content of a passage without the aid of experimenter-provided cues. Typically, and in the present study, no stipulation is put on the order or organization of the recall.

Scoring procedures. All of the examinations were coded for blind scoring. The exams were then scored by a colleague not associated with the investigation; a random sample of the tests

were scored independently by one of the authors to assess interrater reliability. Responses were assigned points on the basis of number of accurate "idea units" recalled from the passage; no credit was given for inferential statements.

Analyses

The analytic procedure consisted of a series of multiple discriminant analyses on the free recall measures at immediate and delayed testing. This series represented planned, orthogonal comparisons specifically designed to address the aforementioned hypotheses. Adoption of the multiple discriminant procedure was based on arguments presented by Harris (1975; pp. 16, 125-127) and Lana and Lubin (1970; p. 300) favoring a multivariate approach over a univariate, repeated measures procedure.

The series of analyses included the following ordered comparisons:

O/T versus I/T. This comparison was concerned with responding to the questions: Is one of the training methods more effective than the other? What is the nature of any between-group differences (e.g., immediate versus delayed testing)? If the groups are not discriminable they can be collapsed for subsequent analyses; if the groups are discriminable only the training group performing in a superior manner is of interest for subsequent analyses.

T versus H. Based on the outcome of the previous analysis,

the training group was compared with the no-training group that received stimulus passages with headings. This comparison responded to the questions: Does training on the use of intact and embedded headings lead to improved performance? What is the nature of any between group differences (e.g., immediate versus delayed testing)? If the groups are not discriminable (i.e., training has no impact on performance) these groups can be merged for comparison against the control group; however, if the groups are discriminable (i.e., H > T), then only group H need be compared to the control group.

H/T versus C. Based on the outcome of the previous analysis the group receiving stimulus passages with headings (H and T collapsed) was compared to the group which received stimulus passages with the headings deleted. This comparison addressed the questions: Does the presence of intact and embedded headings lead to improved performance? What is the nature of any between group differences (e.g., immediate versus delayed testing)?

Results

Interrater Reliability

As previously stated, all of the dependent measures were coded for blind scoring. The free recall exams were scored by a colleague not otherwise associated with the investigation and a random sample of these measures were independently scored by the author to assess interrater reliability. A Pearson product-moment correlation of .87 between the two sets of scores was

judged to represent an adequate standard of interrater reliability.

Free Recall Analyses

As previously discussed, a "step-wise" series of comparisons was employed in analyzing these data; this procedure allowed the investigation to more adequately respond to the hypotheses being addressed. The three ordered steps of this series were: (a) input training versus output training, (b) training versus no-training, and (c) headings versus no-headings. In the event of non-discriminability between groups, this order of comparisons provided the advantage of allowing the groups of any given comparison to be collapsed for the subsequent comparison in the series.

Means and standard deviations for the free recall measures are reported in Table 1. The discriminant analysis between the two training groups on the free recall-information exams failed to produce a significant discriminant function ($\chi^2[2] = .79$, $p \leq .67$). This outcome indicated that the training groups could be collapsed for comparison against the no-training group that had received stimulus passages with headings. (See Table 2 for all of the discriminant equations developed for the free recall Analyses.)

Insert Tables 1 and 2 about here

The discriminant analysis between the collapsed training groups (T) and headings-without-training group (H) also failed to produce a significant discriminant function ($\chi^2[2] = 0.00$, $p \leq 1.00$). This result suggested that training on the use of intact and embedded headings provided no improvement in performance over simply incorporating those cuing devices within the text; consequently, groups T and H were collapsed for comparison against the control group.

The equation contrasting group T/H against group C was significant ($\chi^2[2] = 6.70$, $p \leq .04$); the performance of the former group was superior to that of the latter group. The pattern of loadings suggested that the performance advantage attained by providing students with text containing intact and embedded headings was attributable primarily to increased recall of information in the delayed testing condition. The relative importance of the two testing conditions to the discriminant function was approximately 4:1 in favor of the delayed test. Additionally, students receiving stimulus passages containing intact and embedded headings recalled approximately 11 percent more information at immediate testing and 44 percent more information at delayed testing than students whose passages did not contain these processing aids.

Post Experiment Questionnaire

As previously stated, all students completed a post experi-

ment questionnaire. The questionnaire items are described in Table 3; means and standard deviations for these items are reported in Table 4. The purposes of this questionnaire were threefold: (a) to provide information on the students' non-laboratory use of intact and embedded headings, (b) to provide information on the perceived "disruptability" of receiving stimulus material without headings, and (c) to provide information regarding any experimenter influences on tne students' performances.

Four of the questionnaire items (items 1-4) for the control group(C) were related to perceived "interference" of their experimental performances attributable to having been provided with stimulus passages not containing the intact and embedded headings. Students in this group apparently did not believe that the absence of the headings severely disrupted either their studying or test-taking (see Tables 3 and 4). In this regard, it is important to point out that students would not be completely unaccustomed to encountering "no-headings" material of this length (2400 to 2500 words) in the course of their normal text processing activities. These data suggest that the superior performance of the students whose passages contained headings is not simply attributable to differences in "novelty" between the experimental manipulations.

Insert Tables 3 and 4 about here

Students in all groups reported approximately equivalent (and negligible) experimenter influence upon their performances (item 5; see Tables 3 & 4). From the perspective of the experimental paradigm employed, it is important to note that groups C and H were exposed to identical experimental influences (i.e., participated in all of the experimental sessions as a single group).

Ten of the items on the questionnaire (items 6-15) related to the students' normal (i.e., non-laboratory) use of intact and embedded headings. The responses by students in groups C and H (groups O/T and I/T's responses may have been influenced by the treatment) to these items indicate that the college student makes substantial use of headings and outlines as study and test-taking devices (see Tables 3 & 4). Consequently, training students on a new procedure for using the intact and embedded headings may interfere with the students' present strategies leading to no improvement or even an amelioration in performance. Similar interference effects were observed in the learning strategy training study reported by Holley et al., (1979). This "problem" may have been particularly acute in the present investigation due to the small amount of training given and the short time frame the student had for integrating the "new" technique with their "old" strategy.

Discussion

This investigation examined the utility of intact and embedded headings as processing aids with non-narrative text.

The argument was advanced that headings potentially provide useful cues for both input and output processing but that little empirical evidence is available to either support or refute such a proposition. It was further argued that each of the prior studies reviewed were subject to one or more of the following criticisms: (a) the selection and use of a dependent measure which may have been insensitive to the experimental effects, (b) the use of short, artificial prose, (c) the use of an immediate testing paradigm thus implicitly biasing any benefits of headings associated with long-term retrieval, (d) lack of training on the use of headings as processing aids, and (e) failure to examine the effects of intact and embedded headings presented together rather than separately.

The present investigation sought to respond to each of these sources of criticism. The specific objectives of the study were to examine the influence of headings as processing aids and training on the use of headings (both as input and output processing aids) with ecologically-oriented text under conditions of immediate and delayed recall; both intact and embedded headings were employed in the investigation.

The results indicated that input and output training on the use of headings was ineffective in comparison with the group (H) that employed their "normal" study methods with the headings. However, this failure to find a facilitative effect of training should be interpreted cautiously since the negative findings may

have been due to the limited amount of time the students had to integrate the new strategies with their existing techniques. Previous research on learning strategies training has indicated that amount of training and time for integration may be important variables in such contexts (e.g., Dansereau et al., 1979a). Additionally, the training methods employed in the present study should be regarded more as providing the students with an instructional set for the input or output use of the headings rather than as providing the students with an intensive training program.

The results also indicated that students provided with text containing headings performed significantly better than students whose text did not contain these processing aids. The principal difference between the groups occurred in the delayed recall condition; students in the with-headings groups recalled approximately 11 percent more information at immediate recall and 44 percent more information at delayed recall than students in the without-headings group.

In general, the results of this study support the assumption that the presence of intact and embedded headings facilitate performance with non-narrative text, particularly at long-term delays. This outcome tentatively suggests that these devices may be more useful as retrieval aids than as comprehension aids. This interpretation may explain why some of the previous investi-

gations exploring the utility of headings as comprehension aids with immediate testing conditions failed to find facilitative effects (e.g., Klare, Shuford, & Nichols, 1958; Robinson & Hall, 1941).

The pragmatic implications of the present study appear to be rather straightforward. Texts should be constructed with intact and embedded headings and students should make extensive use of these devices for studying and test-taking. However, the present investigation also leaves a number of unanswered questions. For example: Can better criteria be established for defining the properties of headings? Is there an optimum number of headings for a given passage length? Do the headings need to be arranged hierarchically? Is training beneficial for certain students and not others? What is the optimum training procedure? Are there meaningful relationships between individual differences and manipulations involving headings?

Obviously this does not represent an exhaustive list of potential research questions. What it does represent is a sample of the type of issues for which the present investigation may serve as a springboard.

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Table 1

Means and Standard Deviations on

the Free Recall Measures[a]

Group[b]		Free Recall Exam	
		Immediate	Delayed
Control (C) (n=23)	$\bar{x}$	40.58	24.90
	sd	14.13	14.07
Headings (H) (n=24)	$\bar{x}$	46.31	35.42
	sd	13.49	19.44
Input (I/T) Training (n=22)	$\bar{x}$	45.82	38.23
	sd	14.57	21.54
Output (O/T) Training (n=21)	$\bar{x}$	42.87	33.84
	sd	20.84	12.04

[a]Scores are reported in percentages of maximum possible score.

[b]See text for elaboration.

Table 2

Discriminant Equations Developed

for the Free Recall Analyses

Comparison[a]	Free Recall Exam		p≤
	Immediate	Delayed	
O/T vs I/T	1.45	2.68	.67
T vs H	3.81	-1.72	1.00
T/H vs C	1.07	3.79	.04

[a] O/T vs I/T: Output training compared to input training.

T vs H: The collapsed training groups compared to the headings-without-training group.

T/H vs C: The collapsed headings-without training group and headings-with-training groups compared to the no-headings-no-training group (i.e., presence of headings compared to absence of headings).

Table 3

Verbal Description of Items Contained in the Post Experiment Questionnaire[a]

Item Number	Item
1.[b]	The passages that you studied during this experiment did not contain any headings. How much did this affect your studying?
2.[b]	How much did this absence of headings affect your performance on the tests?
3.[b]	Most textbook chapters have an outline of the author's headings at the beginning of the chapter. The passages that you studied did not have an outline. How much did this affect your studying?
4.[b]	How much did this absence of an outline affect your performance on the tests?
1.[c]	How much did you use the headings within the passage to help you in studying for the tests?
2.[c]	How much did you use the author's outline of the passage to help you in studying for the tests?
3.[c]	How much did you use the headings within the passage to help you while taking the tests?
4.[c]	How much did you use the author's outline of the passage to help you while taking the tests?
5.	How did the person "running the experiment" influence your performance during the experiment?
6.	How much attention do you pay to headings that occur in textbook chapters?

Table 3 (continued)

Item Number	Item
7.	How much do you feel the headings help you in learning, remembering, and recalling material in textbook chapters?
8.	I spend some time thinking about the heading before I begin reading the section.
9.	I try to relate material in a section to its heading.
10.	After reading a section I try to understand why the author decided to use that particular heading.
11.	I use the author's headings in organizing my notes.
12.	I use the headings in memorizing the information.
13.	I use the headings to help me recall information for a test.
14.	How much attention do you pay to outlines that occur at the beginning of textbook chapters?
15.	How much do you feel the outlines help you in learning, remembering, and recalling material in textbook chapters?

[a]See Table 4 for scale values and means and standard deviations for responses to the items.

[b]These items appeared only on group C's (text-without-headings) version of the questionnaire.

[c]These items appeared only on groups H, I/T, and O/T's (text-with-headings) version of the questionnaire.

Table 4

Means and Standard Deviations for the Items of the Post Experiment Questionnaire[a]

Group[b]		Items[c]														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
C	$\bar{x}$	4.17	3.78	4.30	4.09	3.00	6.00	6.52	4.35	6.30	4.87	5.83	5.74	6.00	5.00	5.96
(n=24)	sd	1.34	1.25	1.20	1.85	2.38	2.00	1.72	2.22	1.90	2.47	2.04	2.52	2.17	1.84	2.10
H	$\bar{x}$	5.63	4.96	6.08	5.13	2.58	5.88	6.17	4.83	5.25	2.71	5.88	5.75	5.92	4.97	5.42
(n=23)	sd	1.75	2.35	1.73	2.11	2.23	2.11	1.57	2.19	1.98	1.70	2.76	2.17	2.33	1.92	2.50
I/T	$\bar{x}$	7.18	7.27	6.32	6.64	3.09	6.18	6.36	5.05	5.68	3.55	6.55	5.95	6.14	5.41	6.68
(n=22)	sd	1.40	1.48	2.08	2.08	2.71	1.92	1.64	2.62	2.62	2.23	2.19	2.50	2.40	2.23	2.40
O/T	$\bar{x}$	6.14	7.19	6.19	7.19	3.67	5.95	6.38	4.00	5.43	3.24	4.76	5.14	5.29	4.90	6.43
(n=21)	sd	1.75	1.56	2.11	1.50	2.40	1.79	0.95	1.72	2.19	2.20	2.65	2.25	2.33	1.87	1.62

[a]Questionnaire items are presented in Table 3. Responses were based on a nine-point Likert-type scale with 1 corresponding to the negative (e.g., none-at-all, never) end of the continuum and 9 corresponding to the positive (e.g., a-great-deal, always) end.

[b]See Table 1 for abbreviations and text for elaboration.

[c]Items 1, 2, 3, and 4 for group C differ from items 1, 2, 3, and 4 for the other three groups; see Table 3.